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1985
Poplar River
Cooperative
Monitoring
Arrangement ...
data exchange,
United States
contribution

POPLAR RIVER

COOPERATIVE MONITORING

ARRANGEMENT

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THIRD QUARTER DATA EXCHANGE

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INTRODUCTION

1985 - THIRD QUARTER DATA EXCHANGE
POPLAR RIVER BASIN

The Poplar River Bilateral Monitoring Committee was authorized by the Governments of Canada and the United States under the Poplar River Cooperative Monitoring Arrangement dated September 23, 1980. The Committee is composed of representatives of the Governments of the United States, State of Montana, Canada, and Province of Saskatchewan. In addition to the representatives of governments, two ex officio members who are local representative of the State of Montana and Province of Saskatchewan participate in activities of the Committee.

One responsibility of the Committee includes the on-going quarterly exchange of results of water quantity, water quality and air quality monitoring programs. The programs are being conducted in Canada and the United States at or near the International Boundary by cooperative monitoring agencies in accordance with the Technical Monitoring Schedules. Monitoring information is to be transmitted by each Committee co-chairman to his counterpart co-chairman within a reasonable period after the termination of each quarter. In addition, pre selected parties are to receive copies of the quarterly exchange.

This package represents information collected by United States sources for the Poplar River basin during the third quarter of 1985. Included are data for surface water quantity and quality, ground water levels. Air quality monitoring was not done during the reporting period.

STREAMFLOW MONITORING

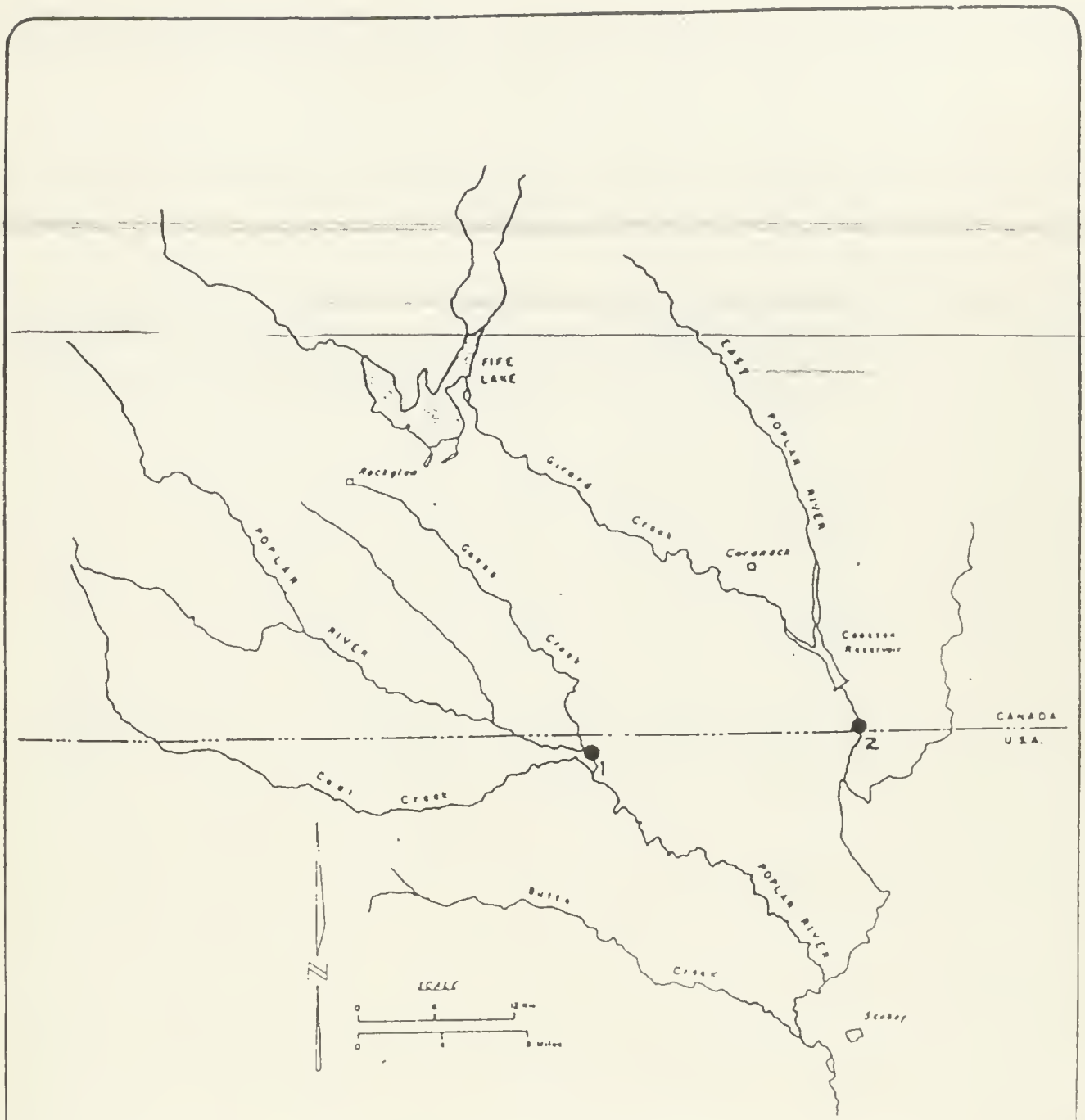
Responsible Agency: U.S. Geological Survey

Daily mean discharge or levels and instantaneous monthly extremes as normally published in surface water data publications.

No. on Map	USGS Station No.	Station Name
1	06178000	Poplar River at International Boundary

Responsible Agency: Environment Canada

2	06178500	East Poplar River at International Boundary



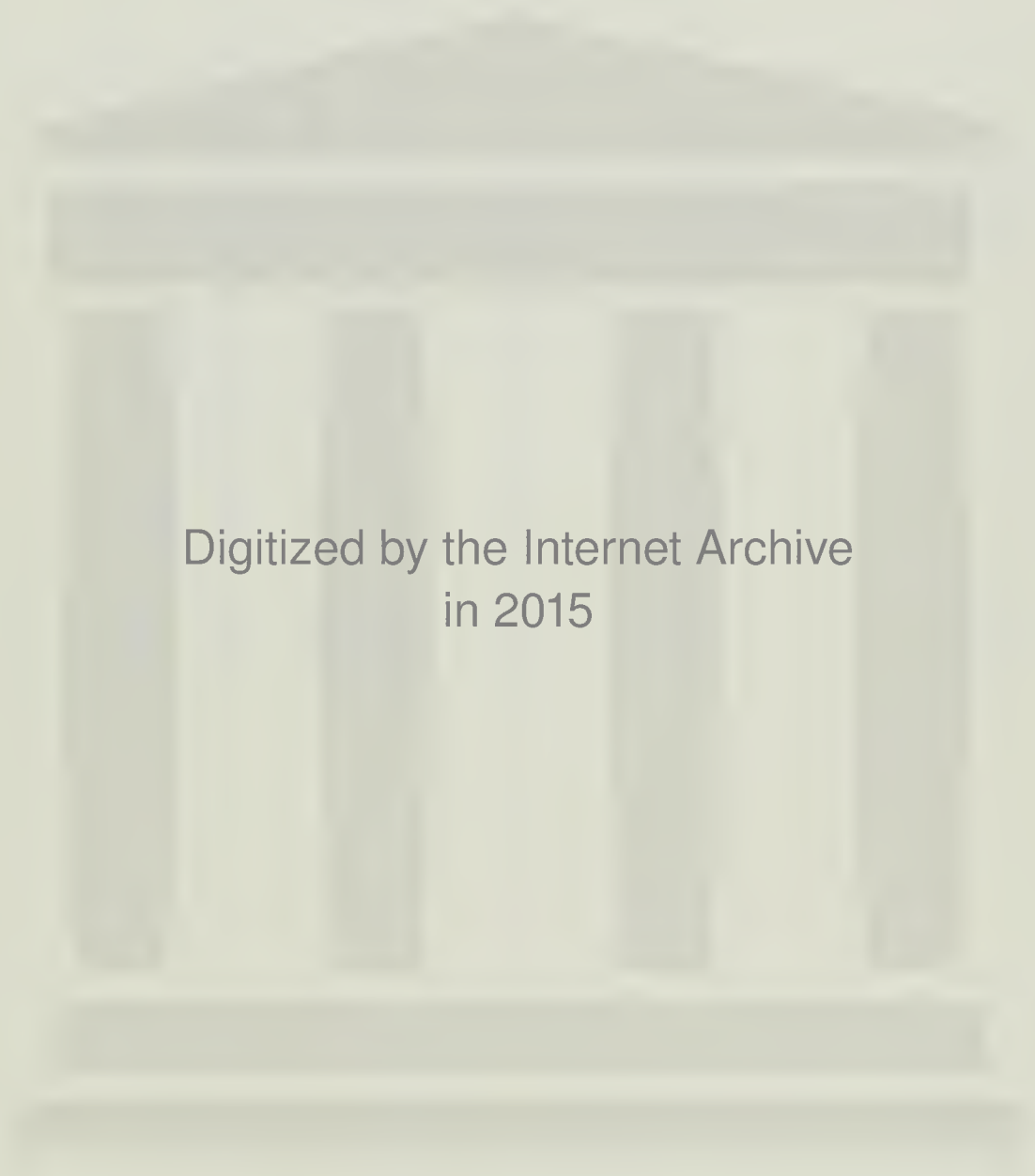
HYDROMETRIC GAUGING STATIONS

POPLAR RIVER BASIN

POPLAR RIVER AT INTERNATIONAL BOUNDARY

DISCHARGE, CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1985 TO DECEMBER 1985
MEAN VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1			60	22	9.2	15	.14	.06	.03			
2			50	22	8.7	16	.13	.06	.03			
3			30	23	8.0	13	.13	.08	.03			
4			15	21	8.1	11	.17	.07	.03			
5			8.0	31	6.9	9.8	.10	.05	.05			
6			4.0	37	5.9	8.4	.11	.04	.05			
7			3.0	28	5.6	6.7	.09	.05	.27			
8			3.0	21	5.0	5.9	.08	.06	.30			
9			7.0	17	4.8	4.4	.07	.04	.12			
10			40	17	5.1	4.2	.07	.04	.08			
11			80	17	5.7	4.2	.07	.06	.11			
12			90	16	5.7	3.4	.08	.07	.17			
13			100	14	6.3	2.7	.06	.05	.24			
14			140	13	7.6	2.2	.05	.04	.92			
15			130	12	7.5	1.7	.04	.05	.88			
16			150	12	7.2	1.4	.04	.10	.80			
17			160	12	7.1	.88	.09	.07	.71			
18			171	11	6.3	.62	.13	.08	1.1			
19			166	13	5.2	.49	.11	.07	1.6			
20			177	19	4.4	.36	.04	.05	1.6			
21			141	18	3.8	.28	.07	.06	1.8			
22			100	15	3.4	.25	.05	.05	1.9			
23			62	13	3.0	.23	.13	.06	2.0			
24			53	14	2.7	.23	.29	.06	2.1			
25			46	15	3.4	.22	.08	.05	2.0			
26			35	14	3.8	.21	.06	.03	2.2			
27			26	13	3.8	.23	.07	.02	2.0			
28			20	11	4.4	.20	.06	.04	2.0			
29			23	11	4.3	.22	.07	.04	2.0			
30			16	10	6.0	.21	.07	.04	2.0			
31			22	---	13	---	.06	.04	--			
TOTAL			2128.0	512	181.9	114.63	2.81	1.68	29.12			
MEAN			68.6	17.1	5.87	3.82	.09	.05	.97			
MAX			177	37	13	16	.29	.10	2.2			
MIN			3.0	10	2.7	.20	.04	.02	.03			
AC-FT			4220	1020	361	227	5.6	3.3	58			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[illegible] RIVER BASIN

[illegible] POLTAR RIVER AT INTERNATIONAL BOUNDARY

[illegible], CALENDAR YEAR JANUARY 1985 TO DECEMBER 1985
YEAR VALUES

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.5	2.4	3.4	3.5	5.1	6.6	2.6	2.5	2.6			
2	2.6	2.3	3.1	3.9	5.1	4.8	2.6	3.0	2.6			
3	2.8	2.2	2.6	3.6	5.1	4.4	2.5	3.1	2.6			
4	2.9	2.2	2.4	3.4	5.1	3.9	2.4	2.9	2.7			
5	2.8	2.0	2.3	3.4	5.1	3.5	2.4	2.7	2.9			
6	2.9	2.0	2.4	3.4	5.1	3.5	2.4	2.5	3.0			
7	2.9	2.0	2.5	3.4	5.1	3.2	2.4	2.4	3.5			
8	2.7	1.9	2.6	3.2	5.3	3.8	2.4	2.6	3.3			
9	2.8	1.9	2.8	3.1	5.0	3.3	2.2	2.5	3.1			
10	2.7	1.9	2.9	3.1	7.8	3.3	2.3	2.4	3.0			
11	2.4	1.9	3.0	3.1	10	3.3	2.3	2.5	2.9			
12	2.7	1.8	3.0	3.2	12	3.0	2.3	2.9	2.8			
13	2.8	2.0	3.2	3.1	13	3.1	2.3	3.0	3.2			
14	2.9	2.1	3.3	3.1	9.0	3.1	2.3	2.7	3.0			
15	2.9	2.3	3.2	3.1	9.1	2.9	2.2	2.8	3.0			
16	2.9	2.4	3.2	2.8	8.4	3.3	2.3	3.2	2.8			
17	3.0	2.4	3.4	3.1	8.3	3.4	2.2	3.4	2.9			
18	2.9	2.3	3.6	3.1	8.4	2.9	2.6	3.0	2.9			
19	2.8	2.4	3.4	3.4	8.2	2.7	2.5	2.8	3.1			
20	2.7	2.5	3.3	4.3	8.0	2.8	2.4	2.7	2.9			
21	2.7	2.6	3.3	3.7	8.3	2.8	2.3	3.1	3.0			
22	2.7	2.7	3.1	3.3	8.2	2.6	2.3	3.0	3.2			
23	2.8	2.7	3.1	3.1	8.2	2.6	2.4	3.0	3.0			
24	2.9	4.0	3.3	3.8	8.4	2.7	2.5	2.9	2.9			
25	2.9	6.7	3.4	4.6	11	2.8	3.0	2.7	3.0			
26	2.9	3.8	3.1	5.1	8.9	2.6	2.7	2.7	3.1			
27	2.9	2.9	2.8	5.4	9.0	2.6	2.6	2.5	3.0			
28	2.9	3.2	3.0	5.2	9.2	2.7	2.4	2.7	2.7			
29	2.7	---	2.9	5.2	8.6	2.7	2.4	2.9	2.7			
30	2.6	---	2.9	5.0	12	2.7	2.5	2.8	2.8			
31	2.5	---	3.1	---	11	---	2.4	2.8	---			
TOTAL	86.1	71.5	93.6	110.7	251.0	97.6	75.1	86.7	88.2			
MEAN	2.78	2.55	3.02	3.69	8.10	3.25	2.42	2.80	2.94			
MAX	3.0	6.7	3.6	5.4	13	6.6	3.0	3.4	3.5			
MIN	2.4	1.8	2.3	2.8	5.0	2.6	2.2	2.4	2.6			
AC-FT	171	142	186	220	498	194	149	172	175			

SURFACE WATER QUALITY MONITORING

Station Location

Responsible Agency: U.S. Geological Survey

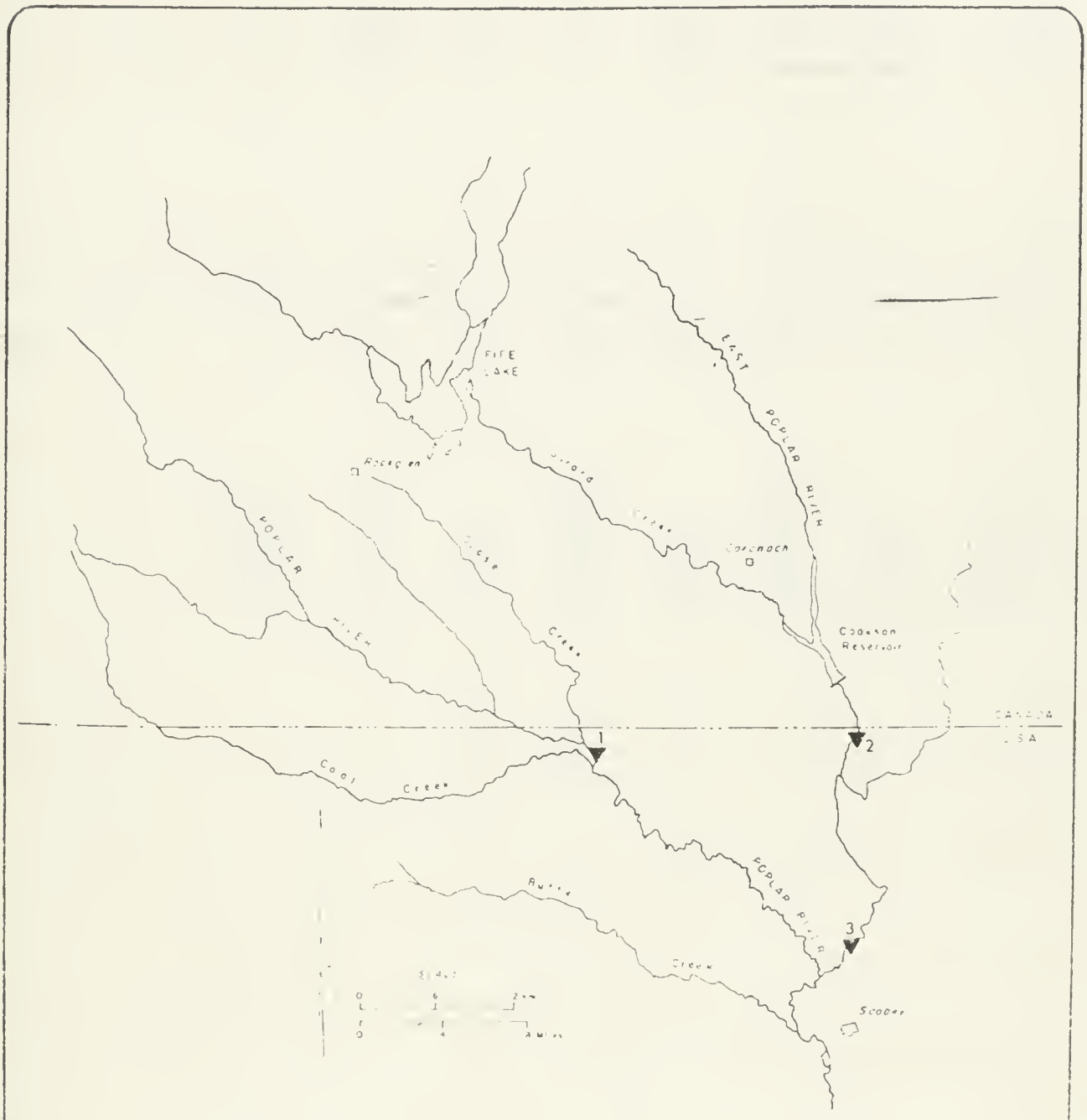
No. on Map	USGS Station No.	Station Name
1	06178000	Poplar River at International Boundary
2	06178500	East Poplar River at International Boundary
3	06179000	East Poplar River near Scobey

PARAMETERS

WATSTORE* Code	Parameter	Analytical method	No.	Sampling Frequency 1	2	3
00410	Alkalinity-field	Elect. Titration		M	M	M
90410	Alkalinity-lab	Elect. Titration		M	M	M
01106	Aluminum-diss	AA		SA	SA	SA
00610	Ammonia-tot	Colorimetric		M	M	M
00625	Ammonia+Org N-tot	Colorimetric		M	M	M
01000	Arsenic-diss	AA, hydride		SA	SA	SA
01002	Arsenic-tot	AA, hydride		A	A	A
01010	Beryllium-diss	AA		SA	SA	SA
01012	Beryllium-tot/rec	AA-Persulfate		A	A	A
01020	Boron-diss	Colorimetric		M	M	M
01025	Cadmium-diss	AA		SA	SA	SA
01027	Cadmium-tot/rec	AA-persulfate		A	A	A
00915	Calcium	AA		M	M	M
00680	Carbon-tot Org	Wet Oxidation		SA	SA	SA
00940	Chloride-diss	Ion chromatography		M	M	M
01030	Chromium-diss	AA		SA	SA	SA
01034	Chromium-tot/rec	AA-persulfate		A	A	A
00080	Color	Electrometric, visual		M	M	M
00095	Conductivity	Wheatstone Bridge		M	D	M
01040	Copper-diss	AA		SA	SA	SA
01042	Copper-tot/rec	AA-persulfate		A	A	A
00061	Discharge-inst	Direct measur.		M	M	M
00950	Fluoride	Electrometric		M	M	M
01046	Iron-diss	AA		M	M	M
01045	Iron-tot/rec	AA-persulfate		A	A	A
01049	Lead-diss	AA		SA	SA	SA
01051	Lead-tot/rec	AA-persulfate		A	A	A
00925	Magnesium-diss	AA		M	M	M
01056	Manganese-diss	AA		SA	SA	SA
01055	Manganese-tot/rec	AA-persulfate		A	A	A
01065	Nickel-diss	AA		SA	SA	SA
01067	Nickel tot/rec	AA-persulfate		A	A	A
00615	Nitrite-tot	Ion-chromatography		M	M	M
00630	Nitrate+Nitrite-tot	Colorimetric		M	M	M
00300	Oxygen-diss	Winkler/water		M	M	M
70507	Phos, Ortho-tot	Colorimetric		M	M	M
00400	pH	Electrometric		M	M	M
00665	Phosphorous-tot	Colorimetric		M	M	M
00935	Potassium-diss	AA		M	M	M
00931	SAR	Calculated		M	M	M
80154	Sediment-conc.	Filtration-gravimetric		M	M	M
80155	Sediment-load	Calculated		M	M	M
01145	Selenium-diss	AA, hydride		SA	SA	SA
01147	Selenium tot/rec	AA, hydride		A	A	A
00955	Silica	Colorimetric		M	M	M
00930	Sodium	AA		M	M	M
00945	Sulfate-diss	Colorimetric		M	M	M
70301	Total Dissolved Solids	Calculated		M	M	M
00010	Temp Water	Toluene		M	M	M
00020	Temp Air	Toluene		M	M	M
00076	Turbidity	Nephelometric		M	M	M
80020	Uranium-diss	Fluorimetric		-	MC	-
01090	Zinc-diss	AA		SA	SA	SA
01092	Zinc-tot/rec	AA-persulfate		A	A	A

*Computer storage and retrieval system - USGS

Symbols C-continuous, D-daily, M-monthly, MC-monthly composite, A-annually at high flow, SA-semi-annually at low and high flow, AA atomic absorption, tot-total, rec recoverable, diss dissolved



SURFACE WATER QUALITY MONITORING STATIONS

POPLAR RIVER BASIN

06178000 POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	BAROMETRIC PRESSURE (MM OF HG) (00025)	CLOUD COVER (PERCENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TURBIDITY (NTU) (00076)
MAR , 1985									
20...	1700	4.0	13.5	693	0	E.0	.00	241	13
APR									
09...	1510	10.5	20.0	695	0	E.0	.00	18	--
MAY									
15...	1100	14.0	15.0	701	0	E4.0	.00	7.5	2.5
JUN									
11...	1615	16.5	16.5	705	70	E7.0	1	4.1	3.3
JUL									
17...	1130	20.0	24.0	700	80	E7.0	1	.15	3.4
AUG									
16...	1030	11.5	9.0	699		E.0	63	.12	3.2
SEP									
11...	1315	11.0	14.0	704	80	E13.0	3	.13	6.3
OCT									
18...	1000	4.5	7.0	705	0	E.0	.00	8.1	5.0

DATE	COLOR (PLATINUM-COBALT UNITS) (00080)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH (STANDARD UNITS) (00400)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
MAR , 1985									
20...	70	336	6.6	55	7.8	3.9	1.9	1.6	.100
APR									
09...	--	989	10.4	103	8.0	4.3	--	1.3	.020
MAY									
15...	30	1,240	8.6	91	8.4	3.0	--	.75	.050
JUN									
11...	45	1,320	13.6	151	8.6	2.4	--	.93	.070
JUL									
17...	60	1,820	5.2	63	9.2	.5	--	1.1	.070
AUG									
16...	55	2,000	8.4	85	8.8	.6	--	1.1	.060
SEP									
11...	100	1,820	8.7	86	8.4	3.9	--	1.6	.060
OCT									
18...	40	762	10.0	84	8.5	2.7	--	.68	.120

[illegible] POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARDNESS, (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
MAR , 1985									
20...	.020	1.7	.20	.200	16	120	0	23	15
APR									
09...	<.010	1.3	<.10	.050	--	230	9	43	30
MAY									
15...	<.010	.80	<.10	.030	--	310	0	42	49
JUN									
11...	<.010	1.0	<.10	.020	--	290	0	27	53
JUL									
17...	<.010	1.2	<.10	.060	13	250	0	15	51
AUG									
16...	<.010	1.2	<.10	.030	--	280	0	27	52
SEP									
11...	<.010	1.7	<.10	.060	--	330	0	43	54
OCT									
18...	<.010	.80	<.10	.020	--	310	0	49	45

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	PERCENT SODIUM (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	ARSENIC DISSOLVED (UG/L AS AS) (0100[illegible]
MAR , 1985									
20...	29	1	33	8.9	2.6	40	.2[illegible]	9.3	[illegible]
APR									
09...	66	2	37	7.6	3.6	96	.3[illegible]	10	--
MAY									
15...	170	[illegible]	54	7.1	6.2	200	.40	6.8	--
JUN									
11...	210	5	61	7.9	5.8	230	.40	.6	--
JUL									
17...	380	11	76	9.3	12	400	.60	.4	[illegible]
AUG									
16...	370	10	73	8.4	12	450	.60	.9	--
SEP									
11...	320	[illegible]	67	9.7	13	340	.[illegible]	9.1	--
OCT									
18...	160	[illegible]	52	8.1	6.1	180	.[illegible]	8.7	--

11 5000 POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DISSOLVED (UG/L AS CU) (01040)
MAR , 1985									
20...	2	<.5	10	200	1	<1	<10	20	3
APR									
09...	--	--	--	390	--	--	--	--	--
MAY									
15...	--	--	--	960	--	--	--	--	--
JUN									
11...	--	--	--	1,200	--	--	--	--	--
JUL									
17...	--	<.5	--	2,000	<1	--	<10	--	<1
AUG									
16...	--	--	--	1,900	--	--	--	--	--
SEP									
11...	--	--	--	2,200	--	--	--	--	--
OCT									
18...	--	--	--	990	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL TOTAL RECOVERABLE (UG/L AS NI) (01067)
MAR , 1985									
20...	7	710	150	<1	<1	70	37	3	[illegible]
APR									
09...	--	--	76	--	--	--	--	--	--
MAY									
15...	--	--	44	--	--	--	--	--	--
JUN									
11...	--	--	30	--	--	--	--	--	--
JUL									
17...	--	--	42	<1	--	--	12	2	--
AUG									
16...	--	--	44	--	--	--	--	--	--
SEP									
11...	--	--	130	--	--	--	--	--	--
OCT									
18...	--	--	39	--	--	--	--	--	--

[illegible]8000 POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
MAR , 1985							
20...	13	<10	90	<1	<1	210	134
APR							
09...	--	--	--	--	--	390	19
MAY							
15...	--	--	--	--	--	720	15
JUN							
11...	--	--	--	--	--	840	9.3
JUL							
17...	8	--	<10	<1	--	1,100	.47
AUG							
16...	--	--	--	--	--	970	.32
SEP							
11...	--	--	--	--	--	1,100	.39
OCT							
18...	--	--	--	--	--	730	16

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
MAR , 1985							
20...	.28	99	.090	47	31	136	0
APR							
09...	.53	--	.010	--	--	261	9
MAY							
15...	.97	--	<.010	--	--	419	0
JUN							
11...	1.1	--	.020	--	--	499	0
JUL							
17...	1.6	--	<.010	--	--	609	0
AUG							
16...	1.3	--	<.010	--	--	610	0
SEP							
11...	1.5	--	.010	--	--	605	0
OCT							
18...	.99	--	.020	--	--	448	0

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	BAROMETRIC PRESSURE (MM OF HG) (00025)	CLOUD COVER (PERCENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TURBIDITY (NTU) (00076)
JAN , 1985									
15...	1000	.0	-10.0	692	75	E.0	1	2.8	--
FEB									
13...	1230	.0	-7.0	706	0	E10	.00	3.0	1.2
MAR									
14...	1130	.0	1.0	700	0	E8.0	.00	2.9	3.0
APR									
17...	0900	10.0	15.0	690	0	E.0	.00	3.2	6.5
MAY									
14...	1445	13.0	18.0	696	0	E.0	.00	9.2	5.5
JUN									
11...	1055	14.0	24.0	707	75	E12.0	2	4.1	4.6
11...	1100	14.0	24.0	707	75	E12.0	2	4.1	4.1
11...	1105	14.0	24.0	707	75	E12.0	2	4.1	4.4
JUL									
17...	0930	20.0	20.0	700	80	E7.0	1	2.2	3.9
AUG									
15...	1430	15.5	15.0	699	100	E.0	62	1.9	2.8
SEP									
12...	0830	12.5	14.5	699	100	E15.0	51	2.4	4.5
OCT									
17...	1400	7.0	11.5	696	0	--	.00	2.5	20

DATE	COLOR (PLATINUM-COBALT UNITS (00080)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH (STANDARD UNITS) (00400)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2) (00405)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)
JAN , 1985								
15...	--	1,470	5.4	41	7.7	22	.36	.840
FEB								
13...	5	1,500	5.4	40	7.5	40	.20	1.20
MAR								
14...	35	1,290	9.6	72	7.8	16	.42	.550
APR								
17...	20	1,500	8.2	81	8.1	9.0	--	.040
MAY								
14...	25	1,280	9.1	95	8.3	3.8	1.5	.120
JUN								
11...	--	1,470	11.3	119	8.5	2.9	.66	.0[illegible]
11...	20	1,470	11.3	119	8.5	2.8	.56	.0[illegible]
11...	20	1,470	11.3	119	8.5	2.8	.55	.05[illegible]
JUL								
17...	25	1,400	5.0	60	8.1	7.2	.87	.130
AUG								
15...	20	1,400	8.0	88	8.4	3.5	.58	.12[illegible]
SEP								
12...	25	1,500	7.4	76	8.2	5.4	.73	.07[illegible]
OCT								
17...	10	1,500	7.0	63	8.3	4.8	.53	.2[illegible]

LAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARDNESS (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM DISSOLVED (MG/L AS NA) (00930
JAN , 1985									
15...	<.010	1.2	<.10	.020	--	390	79	47	190
FEB									
13...	<.010	1.4	.10	<.010	--	410	87	46	170
MAR									
14...	<.010	1.0	.10	.010	--	350	68	43	170
APR									
17...	<.010	.80	<.10	.040	--	--	70	52	210
MAY									
14...	.020	1.6	<.10	.040	--	310	48	46	180
JUN									
11...	<.010	.70	<.10	.030	5.6	360	57	54	220
11...	<.010	.60	<.10	.030	8.2	350	54	53	210
11...	<.010	.60	<.10	.030	5.4	350	54	53	210
JUL									
17...	<.010	1.0	<.10	.030	--	340	51	51	210
AUG									
15...	<.010	.70	<.10	.020	--	350	56	51	200
SEP									
12...	<.010	.80	<.10	.020	5.7	380	69	50	200
OCT									
17...	.020	.80	.10	.010	--	410	77	52	200

DATE	SODIUM ADSORPTION RATIO (00931)	PERCENT SODIUM (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)
JAN , 1985											
15...	4	51	7.0	6.2	280	.30	15	--	--	--	--
FEB											
13...	4	47	7.4	5.8	270	.30	14	--	--	--	--
MAR											
14...	4	51	7.4	5.7	260	.30	13	--	--	--	--
APR											
17...	--	--	7.9	6.4	290	.30	8.7	--	--	--	--
MAY											
14...	5	55	13	6.3	240	.30	4.5	--	--	--	--
JUN											
11...	5	56	7.1	5.7	310	.30	11	5	1	6	<.5
11...	5	56	8.3	5.9	310	.30	11	5	--	--	--
11...	5	56	10	5.9	310	.30	11	5	--	--	--
JUL											
17...	5	57	4.6	6.9	290	.30	9.9	--	--	--	--
AUG											
15...	5	55	7.2	5.6	290	.30	8.0	--	--	--	--
SEP											
12...	5	53	7.7	6.2	280	.30	11	2	--	--	<.5
OCT											
17...	4	51	8.0	6.6	300	.30	10	--	--	--	--

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DISSOLVED (UG/L AS CU) (01040)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)
JAN , 1985										
15...	--	1,800	--	--	--	--	--	--	--	--
FEB										
13...	--	1,700	--	--	--	--	--	--	--	--
MAR										
14...	--	1,500	--	--	--	--	--	--	--	--
APR										
17...	--	1,800	--	--	--	--	--	--	--	--
MAY										
14...	--	1,500	--	--	--	--	--	--	--	--
JUN										
11...	<10	1,900	<1	<1	<10	<10	1	7	8	450
11...	--	1,900	--	--	--	<10	--	--	8	--
11...	--	1,900	--	--	--	<10	--	--	8	--
JUL										
17...	--	2,000	--	--	--	--	--	--	--	--
AUG										
15...	--	1,800	--	--	--	--	--	--	--	--
SEP										
12...	--	1,900	<1	--	<10	--	1	--	--	--
OCT										
17...	--	1,800	--	--	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, SUSPENDED RECOVERABLE (UG/L AS NI) (01066)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
JAN , 1985											
15...	--	28	--	--	--	--	--	--	--	--	--
FEB											
13...	--	17	--	--	--	--	--	--	--	--	--
MAR											
14...	--	34	--	--	--	--	--	--	--	--	--
APR											
17...	--	13	--	--	--	--	--	--	--	--	--
MAY											
14...	--	22	--	--	--	--	--	--	--	--	--
JUN											
11...	460	12	<1	5	30	70	45	5	1	6	4
11...	--	9	--	4	--	--	47	--	--	7	--
11...	--	9	--	3	--	--	48	--	--	5	--
JUL											
17...	--	24	--	--	--	--	--	--	--	--	--
AUG											
15...	--	18	--	--	--	--	--	--	--	--	--
SEP											
12...	--	21	1	--	--	--	21	1	--	--	10
OCT											
17...	--	5	--	--	--	--	--	--	--	--	--

[illegible] POPLAR RIVER AT INTERNATIONAL BOUNDARY--Continued

WATER QUALITY DATA

DATE	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
JAN , 1985							
15...	--	--	--	--	--	970	7.3
FEB							
13...	--	--	--	--	--	990	8.0
MAR							
14...	--	--	--	--	--	880	6.9
APR							
17...	--	--	--	--	--	--	--
MAY							
14...	--	--	--	--	--	780	19
JUN							
11...	0	<10	--	<1	<1	950	11
11...	--	<10	<10	<1	--	930	10
11...	--	<10	<10	<1	--	940	10
JUL							
17...	--	--	--	--	--	910	5.4
AUG							
15...	--	--	--	--	--	890	4.7
SEP							
12...	--	--	<10	<1	--	890	5.7
OCT							
17...	--	--	--	--	--	950	6.4

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (95902)
JAN , 1985							
15...	1.3	69	<.010	18	.14	547	0
FEB							
13...	1.3	61	<.010	19	.15	495	0
MAR							
14...	1.2	69	<.010	59	.46	467	0
APR							
17...	--	--	.010	--	--	383	--
MAY							
14...	1.1	--	<.010	--	--	455	0
JUN							
11...	1.3	--	<.010	--	--	473	0
11...	1.3	--	<.010	--	--	459	0
11...	1.3	--	<.010	--	--	472	0
JUL							
17...	1.2	--	<.010	--	--	469	0
AUG							
15...	1.2	--	<.010	--	--	448	0
SEP							
12...	1.2	--	<.010	--	--	508	0
OCT							
18...	1.3	--	.010	--	--	498	0

POPLAR RIVER BASIN

[illegible] POPLAR RIVER AT INTERNATIONAL BOUNDARY

[illegible CONDUCTANCE] MICROMHO/CM AT 25 DEG. C), CALANDAR YEAR JANUARY 1985 TO DECEMBER 1985
ONCE-DAILY

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1320	1470	1350	1360	1390	1390	1400	1450	1370			
2	1370	1480	1180	1230	1380	1420	1410	1390	1390			
3	1340	1470	1270	1160	1400	1410	1420	1390	1390			
4	1350	1450	1380	1210	1400	1440	1430	1380	1400			
5	1270	1450	1430	1310	1380	1470	1440	1380	1400			
6	1350	1440	1400	1360	1380	1470	1440	1390	1400			
7	1340	1440	1400	1380	1340	1460	1430	1400	1380			
8	1330	1440	1330	1380	1320	1470	1450	1420	1340			
9	1390	1430	1310	1370	1340	1480	1450	1430	1370			
10	1390	1420	1290	1360	1360	1420	1440	1430	1380			
11	1380	1430	1360	1360	1340	1400	1430	1410	1410			
12	1430	1440	1340	1400	1310	1400	1420	1400	1400			
13	1390	1440	1320	1420	1270	1350	1430	1370	1410			
14	1370	1440	1300	1440	1280	1360	1420	1360	1410			
15	1390	1440	1290	1420	1280	1390	1410	1370	1410			
16	1360	1420	1290	1430	1280	1390	1410	1370	1420			
17	1370	1410	1270	1440	1280	1410	1410	1390	1440			
18	1370	1460	1170	1440	1270	1400	1410	1390	1440			
19	1580	1440	1170	1440	1280	1390	1410	1390	1440			
20	1520	1430	1160	1490	1280	1360	1400	1360	1410			
21	1540	1430	1140	1560	1270	1350	1410	1380	1420			
22	1480	1430	1110	1620	1270	1410	1400	1400	1400			
23	1440	1370	1210	1630	1260	1400	1400	1390	1390			
24	1440	1400	1380	1600	1270	1410	1410	1400	1390			
25	1410	770	1390	1580	1260	1390	1390	1400	1400			
26	1420	805	1310	1560	1320	1390	1390	1400	1410			
27	1440	1310	1260	1560	1360	1390	1380	1420	1400			
28	1430	1440	1280	1480	1290	1390	1390	1410	1400			
29	1430	---	1340	1430	1300	1400	1390	1410	1400			
30	1470	---	1400	1430	1280	1420	1400	1420	1420			
31	1560	---	1420	---	1360	---	1420	1410	---			
MEAN	1410	1390	1300	1430	1320	1410	1410	1400	1400			

CAL YR MEAN 1380 MAX 1640 MIN 982

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER QUALITY DATA

DATE	TIME	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	BAROMETRIC PRESSURE (MM OF HG) (00025)	CLOUD COVER (PERCENT) (00032)	WIND SPEED (MILES PER HOUR) (00035)	WEATHER (WMO CODE NUMBER) (00041)	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TURBIDITY (NTU) (00076
JAN, 1985									
15...	1230	.0	.0	694	100	E.0	3	E.50	--
MAR									
14...	0915	.0	.0	703	0	E.0	.00	6.3	6.2
APR									
17...	1045	9.5	19.0	691	0	E.0	.00	6.5	3.4
MAY									
14...	1630	16.0	22.0	698	0	E.0	.00	12	5.4
JUN									
12...	1515	16.0	21.0	700	50	E12.0	1	2.7	5.0
JUL									
16...	1600	23.0	26.0	702	0	E3.0	.00	.30	4.3
AUG									
15...	1600	15.0	14.0	700	100	E.0	62	2.5	2.8
SEP									
11...	1530	12.0	15.0	706	80	E15.0	3	3.5	4.1
OCT									
17...	1600	7.5	12.0	699	0	--	.00	4.5	9.0

OATE	COLOR (PLATINUM-COBALT UNITS) (00080)	SPECIFIC CONOUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, OISSOLVEO (PERCENT SATURATION) (00301)	PH (STANOARO UNITS) (00400)	CARBON DIOXIOE DISSOLVEO (MG/L AS CO2) (00405)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONI TOTAL (MG/L AS N) (00610
JAN, 1985								
15...	--	3,100	1.0	8	7.8	28	.68	.520
MAR								
14...	60	852	6.7	50	7.7	13	.90	.100
APR								
17...	25	872	10.2	99	8.1	5.1	.81	.290
MAY								
14...	40	1,620	9.0	100	8.5	2.7	1.2	.070
JUN								
12...	30	740	10.6	117	8.9	1.0	.93	.070
JUL								
16...	40	1,660	10.4	133	9.2	.4	1.3	.070
AUG								
15...	65	1,820	6.4	70	9.2	.6	1.9	.050
SEP								
11...	45	1,550	9.6	97	9.1	.6	1.3	.05
OCT								
17...	30	1,380	8.8	80	8.8	1.4	.52	.080

[illegible] FOR POPLAR RIVER NEAR SCOBEY, MT.--Continued

WATER QUALITY DATA

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L AS CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
JAN , 1985									
15...	<.010	1.2	<.10	.030	--	780	0	130	110
MAR									
14...	.03D	1.0	.3D	.D50	--	240	0	47	29
APR									
17...	<.010	1.1	<.10	.030	6.6	210	0	36	29
MAY									
14...	<.010	1.3	<.10	.080	--	340	0	43	57
JUN									
12...	<.010	1.0	<.10	.020	--	280	0	25	52
JUL									
16...	<.010	1.4	<.10	.060	--	290	0	16	61
AUG									
15...	<.010	1.9	<.10	.040	--	280	0	18	57
SEP									
11...	<.010	1.3	<.10	.030	11	290	0	21	57
OCT									
17...	<.010	.60	<.10	.020	--	300	0	34	52

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	PERCENT SODIUM (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	ARSENIC DISSOLVED (UG/L AS AS) (01000)
JAN , 1985									
15...	460	7	56	16	14	580	.40	24	--
MAR									
14...	110	3	49	8.3	4.8	160	.20	11	--
APR									
17...	120	4	55	5.6	4.5	160	.20	4.0	<1
MAY									
14...	260	6	62	9.0	8.8	350	.30	8.2	--
JUN									
12...	230	6	63	11	6.8	290	.30	.9	--
JUL									
16...	290	7	67	13	9.7	360	.40	5.1	--
AUG									
15...	310	8	70	10	9.5	420	.40	2.1	--
SEP									
11...	250	6	65	8.2	7.7	310	.30	1.3	6
OCT									
17...	220	6	61	7.4	12	320	.30	3.0	--

EAST FORK POPLAR RIVER NEAR SCOBEY, MT.--Continued

WATER QUALITY DATA

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	BERYLLIUM, TOTAL RECOVERABLE (UG/L AS BE) (01012)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, DISSOLVED (UG/L AS CU) (01040)
JAN , 1985									
15...	--	--	--	3,600	--	--	--	--	--
MAR									
14...	--	--	--	850	--	--	--	--	--
APR									
17...	2	<.5	<10	810	<1	<1	10	40	1
MAY									
14...	--	--	--	2,000	--	--	--	--	--
JUN									
12...	--	--	--	1,600	--	--	--	--	--
JUL									
16...	--	--	--	2,100	--	--	--	--	--
AUG									
15...	--	--	--	2,400	--	--	--	--	--
SEP									
11...	--	<.5	--	2,200	<1	--	<10	--	1
OCT									
17...	--	--	--	1,800	--	--	--	--	--

DATE	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)
JAN , 1985									
15...	--	--	70	--	--	--	--	--	--
MAR									
14...	--	--	100	--	--	--	--	--	--
APR									
17...	7	360	51	<1	<1	40	19	3	1
MAY									
14...	--	--	21	--	--	--	--	--	--
JUN									
12...	--	--	37	--	--	--	--	--	--
JUL									
16...	--	--	43	--	--	--	--	--	--
AUG									
15...	--	--	58	--	--	--	--	--	--
SEP									
11...	--	--	33	1	--	--	10	<1	--
OCT									
17...	--	--	13	--	--	--	--	--	--

06179000 EAST FORK POPLAR RIVER NEAR SCOBEY, MT.--Continued

WATER QUALITY DATA

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)
JAN , 1985							
15...	--	--	--	--	--	1,900	2.5
MAR							
14...	--	--	--	--	--	580	9.8
APR							
17...	4	<10	10	<1	<1	560	9.8
MAY							
14...	--	--	--	--	--	1,000	32
JUN							
12...	--	--	--	--	--	880	6.4
JUL							
16...	--	--	--	--	--	980	.80
AUG							
15...	--	--	--	--	--	1,100	7.6
SEP							
11...	10	--	<10	<1	--	910	8.5
OCT							
17...	--	--	--	--	--	940	11

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SED. SUSP. SIEVE DIAM. %FINER THAN .062 MM (70331)	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	HARD-NESS NONCAR-BONATE (MG/L AS CACO3) (9590
JAN , 1985							
15...	2.5	54	.010	84	.11	689	0
MAR							
14...	.78	--	.020	--	--	318	0
APR							
17...	.76	--	.010	--	--	280	0
MAY							
14...	1.4	--	<.010	--	--	534	
JUN							
12...	1.2	--	<.010	--	--	447	0
JUL							
16...	1.3	--	<.010	--	--	544	0
AUG							
15...	1.5	--	<.010	--	--	543	
SEP							
11...	1.2	--	<.010	--	--	498	
OCT							
17...	1.3	--	.010	--	--	478	0

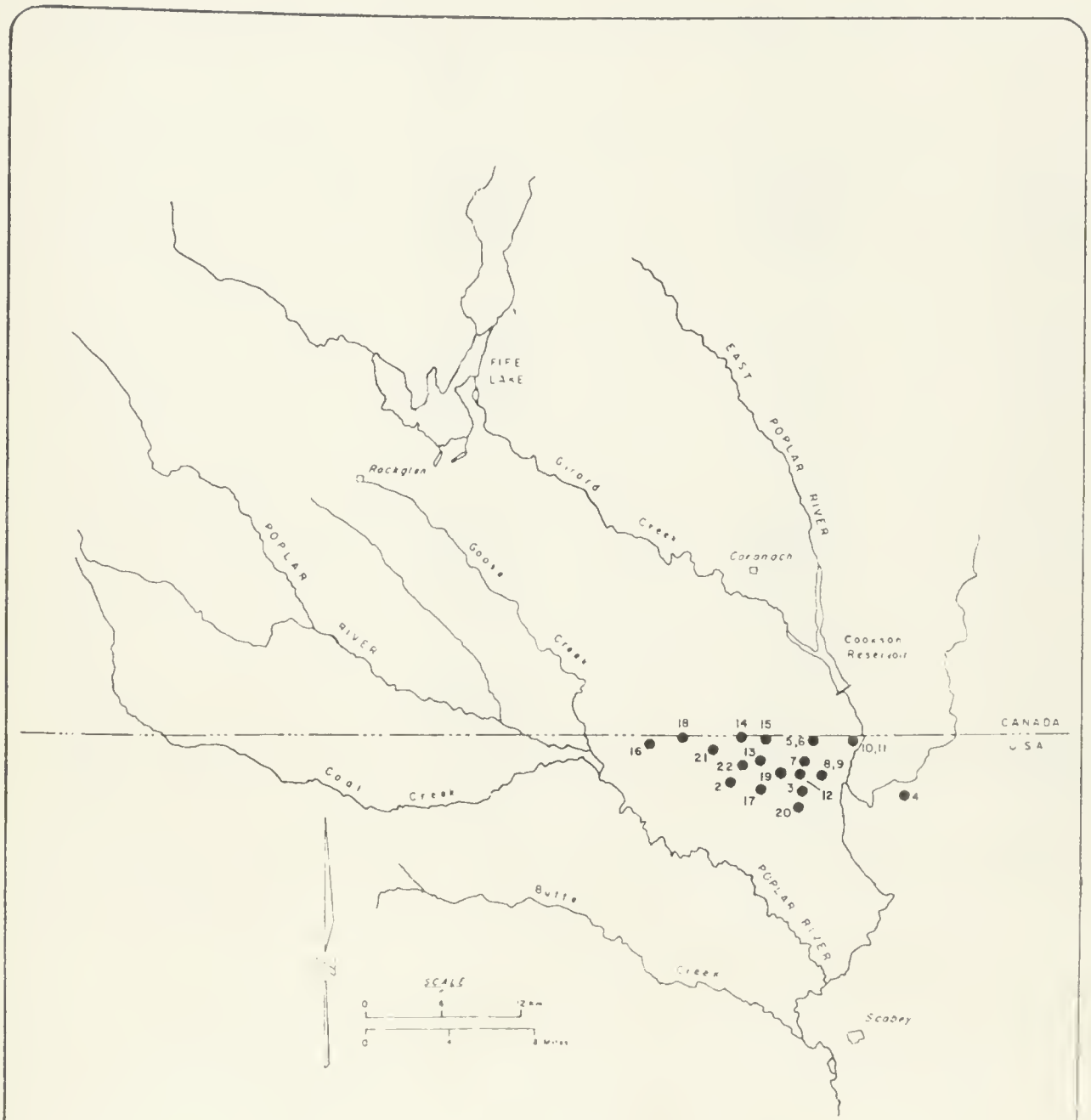
GROUND WATER LEVELS TO MONITOR

POTENTIAL DRAWDOWN DUE TO

COAL SEAM DEWATERING

Responsible Agency: Montana Bureau of Mines and Geology

No. on Map	Sampling
2 to 22	Determine water levels quarterly



GROUND WATER PIEZOMETERS TO MONITER POTENTIAL

DRAWDOWN DUE TO COAL SEAM DEWATERING

Ground-water level measurements

Well no.	Depth to water (feet) March 14, 1985	May 25, 1985	Aug. 20 1985
2	217.99	not measured	218.0
3	81.75	81.72	81.94
4	60.80	60.74	60.72
5	21.02	20.83	20.76
6	21.53	21.30	21.22
7	78.96	77.75	78.52
8	13.48	14.03	14.47
9	14.07	14.51	15.01
10	6.22	5.95	6.44
11	---	-0.85	-0.9
12	dry	dry	dry
13	134.99	135.73	135.07
14	211.87	212.48	212.58
15	224.56	229.07	224.72
16	31.59	31.75	---
17	247.78	247.93	248.15
18	215.28	214.47	---
19	126.11	126.23	126.35
20	dry	0	dry
21	---	242.23	240.88
22	18.86	18.49	18.29